

II. CLAIM AMENDMENTS

1.-39. (Cancelled)

40. (Previously Presented) A method for reducing visual artefacts in a digital image comprising a plurality of image blocks in which image blocks are encoded to form encoded image blocks and said encoded image blocks are subsequently decoded to form decoded image blocks, each decoded image block comprising a number of reconstructed pixels, each reconstructed pixel having an associated pixel value and filtering is performed to reduce visual artefacts due to a boundary between a current decoded image block and a previously decoded image block adjacent to the current decoded image block such that the pixel value of at least one reconstructed pixel in at least one of said current decoded image block and said previously decoded image block is modified by filtering to produce a modified pixel value, wherein said modified pixel value is made available for use in INTRA prediction of an image block within the same image as said current decoded image block and said previously decoded image block.

41. (Previously Presented) A method according to claim 40, wherein encoding of an image block to form an encoded image block is performed using motion compensated prediction with respect to a reference image using said modified pixel value.

42. (Previously Presented) A method according to claim 41, wherein decoding of an encoded image block to form a decoded image block is performed using motion compensated prediction

with respect to a reference image using said modified pixel value.

43. (Previously Presented) A method according to claim 40, wherein encoding of an image block to form an encoded image block is performed using intra prediction with reference to a previously encoded and subsequently decoded image block of the digital image using said modified pixel value.

44. (Previously Presented) A method according to claim 40, wherein decoding of an encoded image block to form a decoded image block is performed using intra prediction with reference to a previously encoded and subsequently decoded image block of the digital image using said modified pixel value.

45. (Previously Presented) A method according to claim 40, wherein modification of the value of at least one reconstructed pixel in at least one of said current decoded image block and said previously decoded image block by filtering is performed immediately after the current decoded image block is formed and a boundary exists between said current decoded image block and said previously decoded image block.

46. (Previously Presented) A method according to claim 40, wherein filtering to reduce visual artefacts due to a boundary between a current decoded image block and a previously decoded image block adjacent to the current decoded image block is performed before all blocks of the digital image are decoded.

47. (Previously Presented) A method according to claim 40, wherein filtering is performed to reduce visual artefacts due to more than one boundary between the current decoded image

block and previously decoded image blocks adjacent to the current decoded image block.

48. (Previously Presented) A method according to claim 47, wherein filtering to reduce visual artefacts due to said more than one boundary is performed sequentially on said more than one boundary in a certain boundary scanning order.

49. (Previously Presented) A method according to claim 48, wherein the order of filtering boundaries is selected such that a boundary to the left of the current decoded image block is filtered before a boundary to the top of the current decoded image block.

50. (Previously Presented) A method according to claim 40, wherein filtering to reduce visual artefacts due to a boundary between a current decoded image block and a previously decoded image block adjacent to the current decoded image block is performed during encoding of said image blocks in an image encoder to form encoded image blocks and further during decoding of said encoded image blocks in a corresponding image decoder, and the order of filtering boundaries used during decoding is the same as that during encoding.

51. (Previously Presented) A method according to claim 40, wherein said modified pixel value is used when filtering is performed to reduce visual artefacts due to at least one other boundary between decoded image blocks.

52. (Previously Presented) A method for reducing visual artefacts in a digital image comprising a plurality of image blocks, which are grouped into macroblocks, in which image blocks are encoded to form encoded image blocks and said

encoded image blocks are subsequently decoded to form decoded image blocks, each decoded image block comprising a number of reconstructed pixels, each reconstructed pixel having an associated pixel value and filtering is performed to reduce visual artefacts due to a boundary between a current decoded image block and a previously decoded image block adjacent to the current decoded image block such that the pixel value of at least one reconstructed pixel in at least one of said current decoded image block and said previously decoded image block is modified by filtering to produce a modified pixel value, wherein the digital image is filtered macroblock by macroblock according to a certain macroblock scanning order and that said modified pixel value is made available for use in INTRA prediction of an image block within the same image as said current decoded image block and said previously decoded image block.

53. (Previously Presented) A method according to claim 52, wherein filtering to reduce visual artefacts due to a boundary between a current decoded image block and a previously decoded image block adjacent to the current decoded image block in a macroblock earlier in the macroblock scanning order is performed before filtering to reduce visual artefacts due to a boundary between a current decoded image block and a previously decoded image block adjacent to the current decoded image block in a macroblock later in the macroblock scanning order.

54. (Previously Presented) A method according to claim 52, wherein filtering to reduce visual artefacts due to a boundary between a current decoded image block and a previously decoded

image block adjacent to the current decoded image block is performed for all boundaries within a macroblock before filtering to reduce visual artefacts is performed within the next macroblock in the macroblock scanning order.

55. (Previously Presented) A method according to claim 40, wherein the digital image comprises at least one segment of image blocks and only boundaries between adjacent decoded image blocks that belong to the same segment are filtered.

56. (Previously Presented) A method according to claim 40, wherein the digital image comprises a luminance component and at least one chrominance component and filtering is performed to reduce visual artefacts due to a boundary between a current decoded image block and a previously decoded image block adjacent to the current decoded image block in at least one of said luminance component and said at least one chrominance component.

57. (Previously Presented) A method according to claim 40, wherein the digital image comprises at least a first colour component and a second colour component and filtering is performed to reduce visual artefacts due to a boundary between a current decoded image block and a previously decoded image block adjacent to the current decoded image block in at least one of the first colour component and the second colour component.

58. (Previously Presented) An encoder for encoding a digital image comprising a plurality of image blocks, the encoder comprising means for encoding image blocks to form encoded image blocks and means for subsequently decoding said encoded

image blocks to form decoded image blocks, each decoded image block comprising a number of reconstructed pixels, each reconstructed pixel having an associated pixel value, the encoder comprising a filter for reducing visual artefacts due to a boundary between a current decoded image block and a previously decoded image block adjacent to the current decoded image block, said filter being arranged to modify the pixel value of at least one reconstructed pixel in at least one of said current decoded image block and said previously decoded image block by filtering to produce a modified pixel value, wherein the encoder is arranged to make said modified pixel value available for use in INTRA prediction of an image block within the same image as said current decoded image block and said previously decoded image block.

59. (Previously Presented) An encoder according to claim 58, wherein said means for encoding image blocks to form encoded image blocks is arranged to form an encoded image block by performing motion compensated prediction with respect to a reference image using said modified pixel value.

60. (Previously Presented) An encoder according to claim 58, wherein said means for encoding image blocks to form encoded image blocks is arranged to form an encoded image block by performing intra prediction with reference to a previously encoded and subsequently decoded image block of the digital image using said modified pixel value.

61. (Previously Presented) An encoder according to claim 58, wherein said filter is arranged to modify the value of at least one reconstructed pixel in at least one of said current decoded image block and said previously decoded image block

immediately after the current decoded image block is formed and a boundary exists between said current decoded image block and said previously decoded image block.

62. (Previously Presented) An encoder according to claim 58, wherein said filter is arranged to reduce visual artefacts due to more than one boundary between said current decoded image block and previously decoded image blocks adjacent to the current decoded image block.

63. (Previously Presented) An encoder according to claim 62, wherein the filter is arranged to reduce visual artefacts due to said more than one boundary by filtering the boundaries sequentially in a certain boundary scanning order.

64. (Previously Presented) An encoder according to claim 58, wherein the filter is arranged to use said modified pixel value when reducing visual artefacts due to at least one other boundary between decoded image blocks.

65. (Previously Presented) An encoder for encoding a digital image comprising a plurality of image blocks which are grouped into macroblocks, each macroblock comprising a certain number of image blocks, the encoder comprising means for encoding image blocks to form encoded image blocks and means for subsequently decoding said encoded image blocks to form decoded image blocks, each decoded image block comprising a number of reconstructed pixels, each reconstructed pixel having an associated pixel value, the encoder comprising a filter for reducing visual artefacts due to a boundary between a current decoded image block and a previously decoded image block adjacent to the current decoded image block, said filter

being arranged to modify the pixel value of at least one reconstructed pixel in at least one of said current decoded image block and said previously decoded image block by filtering to produce a modified pixel value, wherein the filter is arranged to filter the image macroblock by macroblock according to a certain macroblock scanning order and the encoder is arranged to make said modified pixel value available for use in INTRA prediction of an image block within the same image as said current decoded image block and said previously decoded image block.

66. (Previously Presented) An encoder according to claim 65, wherein the filter is arranged to reduce visual artefacts due to a boundary between a current decoded image block and a previously decoded image block adjacent to the current decoded image block in a macroblock earlier in the macroblock scanning order before reducing visual artefacts due to a boundary between a currently decoded image block and a previously decoded image block adjacent to the current decoded image block in a macroblock later in the macroblock block scanning order.

67. (Previously Presented) An encoder according to claim 65, wherein the filter is arranged to reduce visual artefacts due to boundaries between decoded image blocks within a current macroblock in the macroblock scanning order before reducing visual artefacts due to boundaries within the next macroblock in the macroblock scanning order.

68. (Previously Presented) An encoder according to claim 65, further arranged to encode and subsequently decode the image blocks of a macroblock in a certain block scanning order.

69. (Previously Presented) An encoder according to claim 65, further arranged to encode and subsequently decode all the image blocks of a given macroblock in the macroblock scanning order before encoding and subsequently decoding the image blocks of the next macroblock in the macroblock scanning order.

70. (Previously Presented) An encoder according to claim 65, wherein the filter is arranged to reduce visual artefacts due to boundaries between decoded image blocks of a macroblock by filtering, according to said block scanning order substantially immediately after each encoded image block is decoded to form a current decoded image block and a boundary exists between the current decoded image block and a previously decoded image block adjacent to the current decoded image block.

71. (Previously Presented) An encoder according to claim 65, wherein the filter is arranged to reduce visual artefacts due to more than one boundary between said current decoded image block and previously decoded image blocks adjacent to the current decoded image blocks.

72. (Previously Presented) An encoder according to claim 71, wherein the filter is further arranged to reduce visual artefacts due to said more than one boundary by filtering the boundaries sequentially in a certain boundary scanning order.

73. (Previously Presented) An encoder according to claim 58, wherein the digital image comprises at least one segment of image blocks and the filter is arranged to reduce visual

artefacts due to boundaries between adjacent decoded image blocks that belong to the same segment.

74. (Previously Presented) An encoder according to claim 58, wherein the digital image comprises a luminance component and at least one chrominance component and the filter is arranged to reduce visual artefacts due to a boundary between a current decoded image block and a previously decoded image block adjacent to the current decoded image block in at least one of said luminance component and said at least one chrominance component.

75. (Previously Presented) An encoder according to claim 58, wherein the digital image comprises at least a first colour component and a second colour component and the filter is arranged to reduce visual artefacts due to a boundary between a current decoded image block and a previously decoded image block adjacent to the current decoded image block in at least one of the first colour component and the second colour component.

76. (Previously Presented) A decoder for decoding an encoded digital image, said encoded digital image comprising a plurality of encoded image blocks and having been formed by encoding a digital image comprising a plurality of image blocks, the decoder comprising means for decoding encoded image blocks to form decoded image blocks, each decoded image block comprising a number of reconstructed pixels, each reconstructed pixel having an associated pixel value, the decoder comprising a filter for reducing visual artefacts due to a boundary between a current decoded image block and a previously decoded image block adjacent to the current decoded

image block, said filter being arranged to modify the pixel value of at least one reconstructed pixel in at least one of said current decoded image block and said previously decoded image block by filtering to produce a modified pixel value, wherein the decoder is arranged to make said modified pixel value available for use in INTRA prediction of an image block within the same image as said current decoded image block and said previously decoded image block.

77. (Previously Presented) A decoder according to claim 76, wherein said means for decoding encoded image blocks to form decoded image blocks is arranged to form a decoded image block by performing motion compensated prediction with respect to a reference image using said modified pixel value.

78. (Previously Presented) A decoder according to claim 76, wherein said means for decoding encoded image blocks to form decoded image blocks is arranged to form a decoded image block by performing intra prediction with reference to a previously encoded and subsequently decoded image block of the digital image using said modified pixel value.

79. (Previously Presented) A decoder according to claim 76, wherein said filter is arranged to modify the value of at least one reconstructed pixel in at least one of said current decoded image block and said previously decoded image block immediately after the current decoded image block is formed and a boundary exists between said current decoded image block and said previously decoded image block.

80. (Previously Presented) A decoder according to claim 76, wherein said filter is arranged to reduce visual artefacts due

to more than one boundary between said current decoded image block and previously decoded image blocks adjacent to the current decoded image block.

81. (Previously Presented) A decoder according to claim 80, wherein the filter is arranged to reduce visual artefacts due to said more than one boundary by filtering the boundaries sequentially in a certain boundary scanning order.

82. (Previously Presented) A decoder according to claim 76, wherein the filter is arranged to use said modified pixel value when reducing visual artefacts due to at least one other boundary between decoded image blocks.

83. (Previously Presented) A decoder for decoding an encoded digital image, said encoded digital image comprising a plurality of encoded image blocks and having been formed by encoding a digital image comprising a plurality of image blocks, which are grouped into macroblocks, each macroblock comprising a certain number of image blocks, the decoder comprising means for decoding encoded image blocks to form decoded image blocks, each decoded image block comprising a number of reconstructed pixels, each reconstructed pixel having an associated pixel value, the decoder comprising a filter for reducing visual artefacts due to a boundary between a current decoded image block and a previously decoded image block adjacent to the current decoded image block, said filter being arranged to modify the pixel value of at least one reconstructed pixel in at least one of said current decoded image block and said previously decoded image block by filtering to produce a modified pixel value, wherein the filter is arranged to filter the image macroblock by

macroblock according to a certain macroblock scanning order and the decoder is arranged to make said modified pixel value available for use in INTRA prediction of an image block within the same image as said current decoded image block and said previously decoded image block.

84. (Previously Presented) A decoder according to claim 83, wherein the filter is arranged to reduce visual artefacts due to a boundary between a current decoded image block and a previously decoded image block adjacent to the current decoded image block in a macroblock earlier in the macroblock scanning order before reducing visual artefacts due to a boundary between a current decoded image block and a previously decoded image block adjacent to the current decoded image block in a macroblock later in the macroblock scanning order.

85. (Previously Presented) A decoder according to claim 83, wherein the filter is arranged to reduce visual artefacts due to boundaries between decoded image blocks with a current macroblock in the macroblock scanning order before reducing visual artefacts due to boundaries within the next macroblock in the macroblock scanning order.

86. (Previously Presented) A decoder according to claim 83, wherein the decoder is further arranged to decode the encoded image blocks of a macroblock in a certain block scanning order.

87. (Previously Presented) A decoder according to claim 83, further arranged to decode all the encoded image blocks of a given macroblock in the macroblock scanning order before

decoding the encoded image blocks of the next macroblock in the macroblock scanning order.

88. (Previously Presented) A decoder according to claim 83, wherein the filter is arranged to reduce visual artefacts due to boundaries between decoded image blocks of a macroblock by filtering, according to said block scanning order substantially immediately after each encoded image block is decoded to form a current decoded image block and a boundary exists between the current decoded image block and a previously decoded image block adjacent to the current decoded image block.

89. (Previously Presented) A decoder according to claim 88, wherein the filter is arranged to reduce visual artefacts due to more than one boundary between said current decoded image block and previously decoded image blocks adjacent to the current decoded image block.

90. (Previously Presented) A decoder according to claim 89, wherein the filter is further arranged to reduce visual artefacts due to said more than one boundary by filtering the boundaries sequentially in a certain boundary scanning order.

91. (Previously Presented) A decoder according to claim 76, wherein the digital image comprises at least one segment of image blocks and the filter is arranged to reduce visual artefacts due to boundaries between adjacent decoded image blocks that belong to the same segment.

92. (Previously Presented) A decoder according to claim 76, wherein the digital image comprises a luminance component and at least one chrominance component and the filter is arranged

to reduce visual artefacts due to a boundary between a current decoded image block and a previously decoded image block adjacent to the current decoded image block in at least one of said luminance component and said at least one chrominance component.

93. (Previously Presented) A decoder according to claim 76, wherein the digital image comprises at least a first colour component and a second colour component and the filter is arranged to reduce visual artefacts due to a boundary between a current decoded image block and a previously decoded image block adjacent to the current decoded image block in at least one of the first colour component and the second colour component.

94. (Previously Presented) A terminal device comprising an encoder for encoding a digital image comprising a plurality of image blocks, the encoder comprising means for encoding image blocks to form encoded image blocks and means for subsequently decoding said encoded image blocks to form decoded image blocks, each decoded image block comprising a number of reconstructed pixels, each reconstructed pixel having an associated pixel value, the encoder comprising a filter for reducing visual artefacts due to a boundary between a current decoded image block and a previously decoded image block adjacent to the current decoded image block, said filter being arranged to modify the pixel value of at least one reconstructed pixel in at least one of said current decoded image block and said previously decoded image block by filtering to produce a modified pixel value, wherein the encoder is arranged to make said modified pixel value

available for use in INTRA prediction of an image block within the same image as said current decoded image block and said previously decoded image block.

95. (Previously Presented) A terminal device according to claim 94, wherein the terminal device is a mobile terminal.

96. (Previously Presented) A terminal according to claim 94, wherein the terminal device is a wireless terminal of a mobile communications system.

97. (Previously Presented) A storage medium comprising a computer program for operating a computer as an encoder for encoding a digital image comprising a plurality of image blocks, which are grouped into macroblocks, each macroblock comprising a certain number of image blocks, the computer program comprising:

- program code for encoding image blocks to form encoded image blocks;
- program code for subsequently decoding said encoded image blocks to form decoded image blocks, each decoded image block comprising a number of reconstructed pixels, each reconstructed pixel having an associated pixel value;
- program code for implementing a filter to reduce visual artefacts due to a boundary between a current decoded image block and a previously decoded image block adjacent to the current decoded image block, such that the pixel value of at least one reconstructed pixel in at least one of said current decoded image block and said previously decoded image block is modified by filtering to produce a modified pixel value,

wherein the computer program comprises program code for filtering the image macroblock by macroblock according to a certain macroblock scanning order and the computer program further comprises program code for making said modified pixel value available for use in INTRA prediction of an image block within the same image as said current decoded image block and said previously decoded image block.

98. (Previously Presented) A storage medium comprising a computer program for operating a computer as a decoder for decoding an encoded digital image, said encoded digital image comprising a plurality of encoded image blocks and having been formed by encoding a digital image comprising a plurality of image blocks which are grouped into macroblocks, each macroblock comprising a certain number of image blocks, the computer program comprising:

- program code for decoding said encoded image blocks to form decoded image blocks, each decoded image block comprising a number of reconstructed pixels, each reconstructed pixel having an associated pixel value;
- program code for implementing a filter to reduce visual artefacts due to a boundary between a current decoded image block and a previously decoded image block adjacent to the current decoded image block such that the pixel value of at least one reconstructed pixel in at least one of said current decoded image block and said previously decoded image block is modified by filtering to produce a modified pixel value,

wherein the computer program comprises program code for filtering the image macroblock by macroblock according to a

certain macroblock scanning order, and that the computer program further comprises program code for making said modified pixel value available for use in INTRA prediction of an image block within the same image as said current decoded image block and said previously decoded image block.

99. (Previously Presented) A method according to claim 52, wherein the digital image comprises at least one segment of image blocks and only boundaries between adjacent decoded image blocks that belong to the same segment are filtered.

100. (Previously Presented) A method according to claim 52, wherein the digital image comprises a luminance component and at least one chrominance component and filtering is performed to reduce visual artefacts due to a boundary between a current decoded image block and a previously decoded image block adjacent to the current decoded image block in at least one of said luminance component and said at least one chrominance component.

101. (Previously Presented) A method according to claim 52, wherein the digital image comprises at least a first colour component and a second colour component and filtering is performed to reduce visual artefacts due to a boundary between a current decoded image block and a previously decoded image block adjacent to the current decoded image block in at least one of the first colour component and the second colour component.

102. (Previously Presented) An encoder according to claim 65, wherein the digital image comprises at least one segment of image blocks and the filter is arranged to reduce visual

artefacts due to boundaries between adjacent decoded image blocks that belong to the same segment.

103. (Previously Presented) An encoder according to claim 65, wherein the digital image comprises a luminance component and at least one chrominance component and the filter is arranged to reduce visual artefacts due to a boundary between a current decoded image block and a previously decoded image block adjacent to the current decoded image block in at least one of said luminance component and said at least one chrominance component.

104. (Previously Presented) An encoder according to claim 65, wherein the digital image comprises at least a first colour component and a second colour component and the filter is arranged to reduce visual artefacts due to a boundary between a current decoded image block and a previously decoded image block adjacent to the current decoded image block in at least one of the first colour component and the second colour component.

105. (Previously Presented) A decoder according to claim 83, wherein the digital image comprises at least one segment of image blocks and the filter is arranged to reduce visual artefacts due to boundaries between adjacent decoded image blocks that belong to the same segment.

106. (Previously Presented) A decoder according to claim 83, wherein the digital image comprises a luminance component and at least one chrominance component and the filter is arranged to reduce visual artefacts due to a boundary between a current decoded image block and a previously decoded image block

adjacent to the current decoded image block in at least one of said luminance component and said at least one chrominance component.

107. (Previously Presented) A decoder according to claim 83, wherein the digital image comprises at least a first colour component and a second colour component and the filter is arranged to reduce visual artefacts due to a boundary between a current decoded image block and a previously decoded image block adjacent to the current decoded image block in at least one of the first colour component and the second colour component.

108. (Previously Presented) A terminal device comprising an encoder for encoding a digital image comprising a plurality of image blocks which are grouped into macroblocks, each macroblock comprising a certain number of image blocks, the encoder comprising means for encoding image blocks to form encoded image blocks and means for subsequently decoding said encoded image blocks to form decoded image blocks, each decoded image block comprising a number of reconstructed pixels, each reconstructed pixel having an associated pixel value, the encoder comprising a filter for reducing visual artefacts due to a boundary between a current decoded image block and a previously decoded image block adjacent to the current decoded image block, said filter being arranged to modify the pixel value of at least one reconstructed pixel in at least one of said current decoded image block and said previously decoded image block by filtering to produce a modified pixel value, wherein the filter is arranged to filter the image macroblock by macroblock according to a

certain macroblock scanning order and the encoder is arranged to make said modified pixel value available for use in INTRA prediction of an image block within the same image as said current decoded image block and said previously decoded image block.

109. (Previously Presented) A terminal device according to claim 108, wherein the terminal device is a mobile terminal.

110. (Previously Presented) A terminal according to claim 108, wherein the terminal device is a wireless terminal of a mobile communications system.

111. (Previously Presented) A terminal device comprising a decoder for decoding an encoded digital image, said encoded digital image comprising a plurality of encoded image blocks and having been formed by encoding a digital image comprising a plurality of image blocks, the decoder comprising means for decoding encoded image blocks to form decoded image blocks, each decoded image block comprising a number of reconstructed pixels, each reconstructed pixel having an associated pixel value, the decoder comprising a filter for reducing visual artefacts due to a boundary between a current decoded image block and a previously decoded image block adjacent to the current decoded image block, said filter being arranged to modify the pixel value of at least one reconstructed pixel in at least one of said current decoded image block and said previously decoded image block by filtering to produce a modified pixel value, wherein the decoder is arranged to make said modified pixel value available for use in INTRA prediction of an image block within the same image as said

current decoded image block and said previously decoded image block.

112. (Previously Presented) A terminal device according to claim 111, wherein the terminal device is a mobile terminal.

113. (Previously Presented) A terminal according to claim 111, wherein the terminal device is a wireless terminal of a mobile communications system.

114. (Previously Presented) A terminal device comprising a decoder for decoding an encoded digital image, said encoded digital image comprising a plurality of encoded image blocks and having been formed by encoding a digital image comprising a plurality of image blocks, which are grouped into macroblocks, each macroblock comprising a certain number of image blocks, the decoder comprising means for decoding encoded image blocks to form decoded image blocks, each decoded image block comprising a number of reconstructed pixels, each reconstructed pixel having an associated pixel value, the decoder comprising a filter for reducing visual artefacts due to a boundary between a current decoded image block and a previously decoded image block adjacent to the current decoded image block, said filter being arranged to modify the pixel value of at least one reconstructed pixel in at least one of said current decoded image block and said previously decoded image block by filtering to produce a modified pixel value, wherein the filter is arranged to filter the image macroblock by macroblock according to a certain macroblock scanning order and the decoder is arranged to make said modified pixel value available for use in INTRA prediction of an image block within the same image as said

current decoded image block and said previously decoded image block.

115. (Previously Presented) A terminal device according to claim 114, wherein the terminal device is a mobile terminal.

116. (Previously Presented) A terminal according to claim 114, wherein the terminal device is a wireless terminal of a mobile communications system.

117. (Cancelled)